In [120…
```
import pandas as pd
import yfinance as yf
import matplotlib.pyplot as plt
import seaborn
import numpy as np
```

In [121…
```
stock = ["TSLA", "NFLX", "AAPL"]

data = yf.download(stock, start= "2012-08-01", end = "2022-08-01")
```

```
[**********************100%**********************]  3 of 3 completed
```

In [122…
```
data.head()
```

Out[122]:

	Adj Close			Close			High			Low				
	AAPL	NFLX	TSLA	AAPL	NFLX	TSLA	AAPL	NFLX	TSLA	AAPL	NFLX	TSLA	AAPL	NFLX
Date														
2012-08-01	18.529762	7.785714	5.250	21.671785	7.785714	5.250	22.014286	8.254286	5.598	21.535713	7.728571	5.206	21.996786	8.204286
2012-08-02	18.559689	7.695714	5.220	21.706785	7.695714	5.220	21.810356	7.955714	5.370	21.437500	7.612857	5.104	21.530001	7.754286
2012-08-03	18.801231	7.701429	5.454	21.989286	7.701429	5.454	22.070715	7.925714	5.510	21.841429	7.544286	5.348	21.915358	7.837143
2012-08-06	19.010405	8.112857	5.654	22.233929	8.112857	5.654	22.316786	8.167143	5.740	21.973572	7.730000	5.510	22.046070	7.791429
2012-08-07	18.960331	8.271429	6.050	22.175358	8.271429	6.050	22.321428	8.495714	6.180	22.072857	8.078571	5.700	22.241785	8.135714

In [123…
```
closedStocks = data.loc[:, "Close"].copy()
closedStocks.pct_change()
```

Out[123]:

	AAPL	NFLX	TSLA
Date			
2012-08-01	NaN	NaN	NaN
2012-08-02	0.001615	-0.011560	-0.005714
2012-08-03	0.013014	0.000743	0.044828
2012-08-06	0.011126	0.053422	0.036670
2012-08-07	-0.002634	0.019546	0.070039
...	...	...	...
2022-07-25	-0.007398	-0.008755	-0.013995
2022-07-26	-0.008826	-0.021052	-0.035664
2022-07-27	0.034235	0.060025	0.061655
2022-07-28	0.003572	-0.003219	0.022124
2022-07-29	0.032793	-0.004955	0.057850

2515 rows × 3 columns

In [124…
```
closedStocks.plot(figsize = (18, 8), fontsize = 15)
plt.style.use("seaborn")
plt.show()
```

In [125…
```
norm = closedStocks.div(closedStocks.iloc[0]).mul(100) #Normalize stock data
norm.plot(figsize = (18, 8), fontsize = 15)
plt.style.use("seaborn")
plt.show()
```

In [ ]:
```
```

In [134…
```
com = closedStocks.pct_change().dropna() #dropna removes null values
com.describe()
```

Out[134]:

	AAPL	NFLX	TSLA
count	2514.000000	2514.000000	2514.000000
mean	0.000966	0.001794	0.002673
std	0.018119	0.030287	0.035597
min	-0.128647	-0.351166	-0.210628
25%	-0.007436	-0.011782	-0.014471
50%	0.000887	0.000633	0.001527
75%	0.010372	0.014975	0.019237
max	0.119808	0.422235	0.243951

In [135…
```
sum = com.describe().T.loc[:, ["mean", "std"]]
sum
```

Out[135]:

	mean	std
AAPL	0.000966	0.018119
NFLX	0.001794	0.030287
TSLA	0.002673	0.035597

In [136…
```
sum["mean"] = sum["mean"]*252
sum["std"] = sum["std"] * np.sqrt(252) #multiply the values by the average trading days in a year
```

```
sum
```

Out[136]:

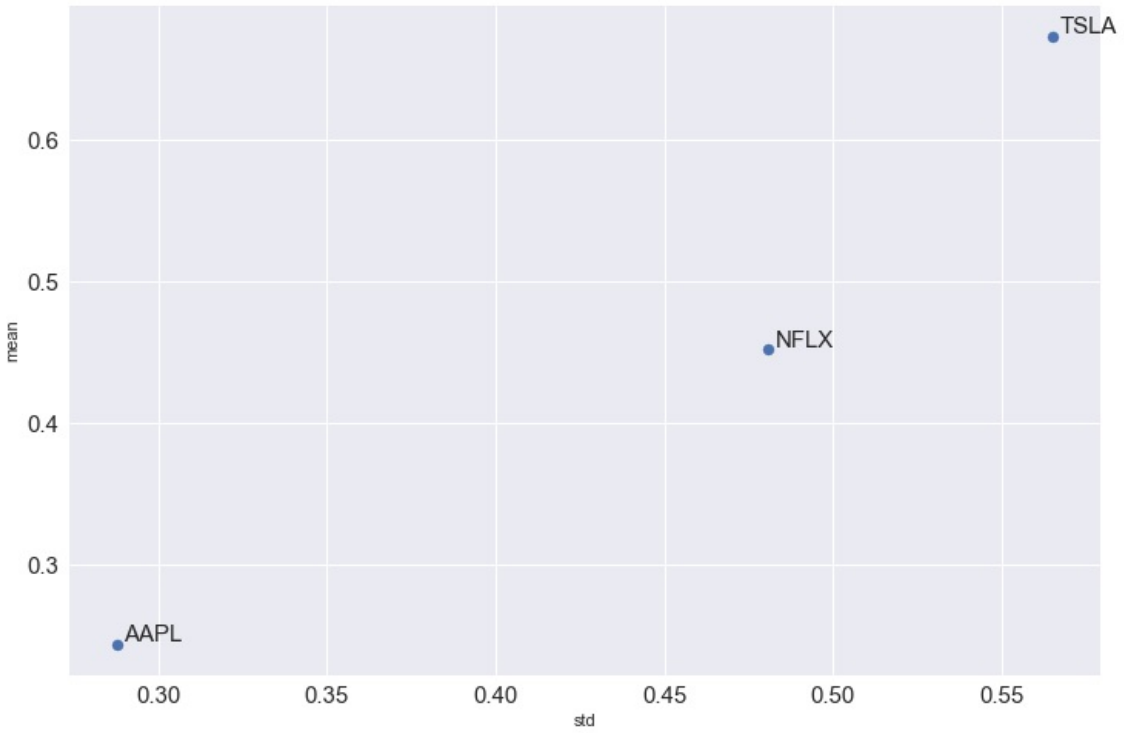
	mean	std
AAPL	0.243495	0.287637
NFLX	0.452054	0.480786
TSLA	0.673642	0.565081

In [137…

```
sum.plot.scatter(x = "std", y = "mean", figsize = (12,8), s = 50, fontsize = 15)

for i in sum.index:
 plt.annotate(i, xy=(sum.loc[i, "std"]+0.002, sum.loc[i, "mean"]+0.002), size = 15)

#TSLA is more risky to own than AAPL and NFLX because of a high standard deviation, however the expected return
```



In [ ]:

In [ ]: